A RAPID METHOD FOR PESTICIDE RESIDUES DETECTION AND QUANTIFICATION IN MAIZE, WHEAT AND RAPE

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Abstract

In order to ensure food security of cereals from Banat, we developed a rapid method HPLC for pesticide residues detection and quantification in maize, wheat and rape. All samples of maize, wheat and rape were obtained from Timiș County. We followed some pesticides from commercial *Nuprid AL 600 FS* (insecticide, active compound imidacloprid), *Buctril Universal* (herbicide, active compound bromoxynil), Sekator Progress OD (herbicide, active compound amidosulfuron) and Decis (Decis 25 WG or Decis Mega 50 EW, insecticide, active compound deltamethrin). Calibration curves for imidacloprid, bromoxynil, amidosulfuron and deltamethrin were performed using Pestanal standards and an HPLC-DAD apparatus, Dionex Ultimate 3000, equipped with quaternary pump LPG 3400A, thermostat of columns TCC-3000 and a C-18 Acclaim® 120 Silica-reversed-phase column. Extraction and concentration of pesticide residues were made in methanol, acetonitrile and mixture water-acetonitrile solvents, by ultrasonication in two steps, at 59 kHz, 30±2^{o}C, during 30 and 15 min., respectively. Time of analyses was between 5-10 min. The residual pesticides'concentration were higher than MRLs authorized by UE laws in some of the samples.

Key words: imidacloprid, bromoxynil, amidosulfuron, deltamethrin, HPLC-DAD analysis

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